

REMARKS

These remarks are submitted in reply to the Office Action dated September 06, 2005. Applicant respectfully requests reconsideration and further examination of the patent application under 37 C.F.R. § 1.111.

Upon entry of the foregoing Amendment, claims 1 - 7 are pending in the application. Claim 2 is re-presented and amended. Based on the remarks herein, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

I. Claims 1 and 3-7 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The OA stated the claim(s) contained subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The OA stated that in claims 1 and 7, the limitation of a tunability range from about 10% to about 80% including room temperature appears to be new matter which was not disclosed in the original subject matter.

Applicant has deleted the aforementioned alleged new matter and submits this deletion renders this rejection moot.

II. Claims 1 and 3-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. in combination with Dimos et al., Mee, and Ishizuka et al. (all of record) for the reasons of record. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zappala in combination with Mee, Ishizuka et al., Miyazaki et al. and Dimos et al. (all of record).

Amended claims 1 and 7 now provide:

1. (Currently Amended) A wireless telephone handset comprising:
an antenna connection;
a diplexer coupled to the antenna connection;

a transmit section connected to a first port of the diplexer;
a receive section connected to a second port of the diplexer; and

wherein the diplexer includes first and second notch filters, each of the notch filters comprising a main transmission line, a first coupling mechanism, and a first electrically tunable resonator coupled to the main transmission line through the first coupling mechanism, wherein the first electrically tunable resonator includes a voltage tunable dielectric varactor incorporating ~~tunable dielectric material that a composite or doped voltage tunable dielectric material fabricated without heating to a temperature just below the eutectic temperature. capable of a permittivity in a range from about 20 to about 2000, and a tunability in a range from about 10% to about 80% at temperatures including room temperature.~~

7. (Currently Amended) A wireless telephone handset comprising:

an antenna connection;
a diplexer coupled to the antenna connection;
a transmit section connected to a first port of the diplexer;
a receive section connected to a second port of the diplexer; and

wherein the diplexer includes first and second notch filters, each of the notch filters comprising a bandpass filter connected between a termination and one of a circulator or a 3dB hybrid, wherein the bandpass filter includes a voltage tunable dielectric varactor incorporating ~~tunable dielectric material a composite or doped voltage tunable dielectric material fabricated without heating to a temperature just below the eutectic temperature. capable of a permittivity in a range from about 20 to about 2000, and a tunability in a range from about 10% to about 80% at temperatures including room temperature.~~

As provided in the Dimos '127 cited art, the steps required for Dimos to produce thin film dielectric material with decent performance require:

The process includes the steps of:

(i) selecting a polycrystalline thin film dielectric material to provide a desired degree of tunability of an electromagnetic signal passing therethrough;

(ii) forming a layer of the highly textured or epitaxial, polycrystalline thin film of dielectric material on a crystalline, electrically insulating substrate;

(iii) heating the layer to a temperature sufficient to cause regrowth of the crystals in the layer to form an annealed layer of the thin film dielectric material having a final mean grain size that is more than the initial mean grain size.

Applicant submits that even if the performance of Dimos is capable of the claimed performance of the present invention (a fact the Applicant maintains may not be the case), it does so by fabrication of the tunable dielectric using the complicated steps provided above. To the contrary, through a great amount of research and development and trial and error, the present invention provides the excellent performance claimed above by using composite or appropriately doped tunable dielectrics, such as from the the group consisting of: BSTO-MgO, BSTO-MgAl₂O₄, BSTO-CaTiO₃, BSTO-MgTiO₃, BSTO-MgSrZrTiO₆, and combinations thereof; or, as claimed in claim 3, the tunable dielectric or doped material may be a BSTO-composite ceramic material.

Further, as differentiated in claims 1 and 7, the present invention in the fabrication process does not require heating to a temperature just below the eutectic temperature. This fact is vital to commercial viability of any products integrating voltage tunable dielectrics therein. This step is set forth in great detail in Dimos at least in column 2, line 17, column 2, line 24, column 4, line 51, column 7, line 34, etc.

Regarding the rejection of claim 7, Applicant suggests that is there is no teaching, suggestion or motivation, other than mere conclusory statements that it would be beneficial to provide for variable tuning, to combine Miyazaki et al. in combination with Dimos et al., Mee, and Ishizuka et al. Indeed, it would be very highly unlikely that one could find the motivation to combine four references to render obvious the present invention as claimed in claim 7.

Thus, Applicant submits that with the present amendments, the rejections of claims 1 and 7 and claims that depend therefrom have been traversed.

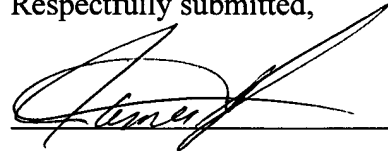
Conclusion

From the foregoing, Applicants respectfully submit that all of the stated grounds of rejections have been properly traversed, accommodated, or rendered moot. Accordingly, Applicants respectfully request that the application is in condition for allowance and respectfully request such action.

If the Examiner believes, for any reasons, that personal communication will expedite prosecution of this application the Examiner is invited to telephone the undersigned at the following number: 202-607-4607.

The USPTO is authorized to charge Deposit Account No. 502697 any fees associated with this response.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'James S. Finn', is written over a horizontal line.

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